To,

ASSISTANT EXECUTIVE ENGINEER

T DASARAHALLI SUB DIVISION

BBMP

BANGALORE

Date:- 28/05/2020

Dear Sir,

Sub: : M/s. Civil Pro Services for the Improvements of CC drain and road kempegowda Nagara 6th A cross and 6th B cross roads in Dasarahalli ward no15

Ref: 1. Work Order No: EE/DD/W.O/467/2019-20

2. Job code: 015-20-000010

We are herewith Hanumantharaju.B.T 1334 Anjanadri,7th Main 11th Cross OC Road 2nd Stage,Mahalakshmipuram Bangalore-86. Bangalore First and Final Bill duly verified and certified that the work is satisfactory and for a Gross Value of Rs. 30,33,304.00/- (Rs. Thirty Lakhs Thirty Three Thousand Three Hundred and Four Only)

Thanking you,

Yours faithfully,

For Civil Pro

CIVIL Pro Sig. Date. BANGALORE

R. KARTHIK RECHAN
AUTHORIZED SIGNATORY
CIVIL PRO

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಎಂಜಿನಿಯರ್
ಟಿ. ದಾಸರಹಳ್ಳಿ ಉಪ ವಿಭಾಗ
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QC ABSTRACT

AME OF WORK: Improvements of CC drain and road kempegowda Nagara 6th A cross and 6th B cross roads in Dasarahalli ward no15

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Steel	Bend test	One Test		1	1
		Tensile Test	One Test		1	1
		Yield Test	One Test		1	1
		ReBend test	One Test		1	1
6	Precast (100mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
7	RMC(M20)	Compressive Strength(7days and 28days)	4 set /31-100 cum	41.03	8	8
8	Cement Concrete Pavemet (M30)	Compressive Strength(7days and 28days)	4 set /31-100 cum	52.5	8	8
9	WMM	Sieve Analysis	One Test		1	1
		Impact Value	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	CP-2020-05-26-90 **Date: 02-02-20**
Customer	:	Assistant Executive Engineer,T Dasarahalli Sub Division, BBMP,
Address	:	T Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of CC drain and road kempegowda Nagara 6th A cross and 6th B cross roads in Dasarahalli ward no15
Agency	:	Hanumantharaju.B.T 1334 Anjanadri,7th Main 11th Cross OC Road 2nd Stage,Mahalakshmipuram Bangalore-86
Customer's Reference	:	EE/DD/W.O/467/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	30-01-20
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	30-01-20
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

SL.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.54	–
2	Finess by Air permeablity method (m^2/kg,Min)	298.2	225m^2/kg, Min
3	Density (gm/cc)	3.12	–
4	Standard Consistency (%)	29.0%	Not specified
5	Initial Setting time	160 minutes	Not less than 30 minutes
6	Final Setting time	255 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	2mm	Not more than 10 mm

Note:

The results pertain to the samples received and tested.

All information furnished by the Customer/Representative

Any correction in the report will make this report invalid

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Samples will be disposed after 90 days from the date of issue of test certificate

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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Certificate No.: TC-5548

Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2020-05-26-90** **Date: 27-02-20**
Customer	:	Assistant Executive Engineer,T Dasarahalli Sub Division, BBMP, Bangalore.
Address	:	T Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of CC drain and road kempegowda Nagara 6th A cross and 6th B cross roads in Dasarahalli ward no15
Agency	:	Hanumantharaju.B.T 1334 Anjanadri,7th Main 11th Cross OC Road 2nd Stage,Mahalakshmipuram Bangalore-86
Customer's Reference	:	EE/DD/W.O/467/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	30-01-20
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	30-01-20
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	38.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	59.0N/mm^2	Not less than 53 N/mm^2

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-05-26-90** **Date: 04-02-20**
Customer	:	Assistant Executive Engineer,T Dasarahalli Sub Division, BBMP, Bangalore.
Address	:	T Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of CC drain and road kempegowda Nagara 6th A cross and 6th B cross roads in Dasarahalli ward no15
Agency	:	Hanumantharaju.B.T 1334 Anjanadri,7th Main 11th Cross OC Road 2nd Stage,Mahalakshmipuram Bangalore-86
Customer's Reference	:	EE/DD/W.O/467/2019-20
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	30-01-20
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	31-01-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : **15000** **grams**

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	187	187	1.2	98.8	90-100
3	20 mm	7276	7463	49.8	50.2	30-70
4	10 mm	4074	11537	76.9	23.1	10-35
5	4.75 mm	3000	14537	96.9	3.1	0-5
6	Pan	463	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-05-26-90** **Date: 04-02-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.8	
3	Specific Gravity	2.68	–
4	Bulk Density(Loose) (Kg/l)	1.53	–
5	Bulk Density(Compacted) (Kg/l)	1.57	–
6	Water Absorption(%)	0.23	–

Note:

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Quality Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-05-26-90**
Customer	:	Assistant Executive Engineer,T Dasarahalli Sub Division, BBMP, Bangalore. **Date: 02-02-20**
Address	:	T Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of CC drain and road kempegowda Nagara 6th A cross and 6th B cross roads in Dasarahalli ward no15
Agency	:	Hanumantharaju.B.T 1334 Anjanadri,7th Main 11th Cross OC Road 2nd Stage,Mahalakshmipuram Bangalore-86
Customer Reference	:	EE/DD/W.O/467/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	30-01-20
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	31-01-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	236	236	4.7	95.3	90-100
3	10 mm	2629	2865	57.3	42.7	25-55
4	4.75 mm	1779	4644	92.9	7.1	0-10
5	Pan	356	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-05-26-90** **Date: 02-02-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	9.3	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	10.7	
3	Specific Gravity	2.67	–
4	Bulk Density(Loose) (Kg/l)	1.54	–
5	Bulk Density(Compacted) (Kg/l)	1.58	–
6	Water Absorption(%)	0.22	–
7	Aggregate crushing Value(%)	24.5	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	23.5	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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Quality Manager

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TEST REPORT OF FINE AGGREGATE

Lab ID	:	CP-2020-05-26-90 **Date: 02-02-20**
Customer	:	Assistant Executive Engineer,T Dasarahalli Sub Division, BBMP, Bangalore.
Address	:	T Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of CC drain and road kempegowda Nagara 6th A cross and 6th B cross roads in Dasarahalli ward no15
Agency	:	Hanumantharaju.B.T 1334 Anjanadri,7th Main 11th Cross OC Road 2nd Stage,Mahalakshmipuram Bangalore-86
Customer's Reference	:	EE/DD/W.O/467/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	30-01-20
Sample Type	:	Fine Aggregate
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	31-01-20
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	27	27	2.7	97.3	90-100	90-100	90-100	95-100
3	2.36 mm	55	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	239	321	32.1	67.9	30-70	55-90	75-100	90-100
5	600 micron	206	527	52.7	47.3	15-34	35-59	60-79	80-100
6	300 micron	205	732	73.2	26.8	5-20	8-30	12-40	15-50
7	150 micron	191	923	92.3	7.7	0-10	0-10	0-10	0-15
8	Pan	77	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2020-05-26-90** **Date: 02-02-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.5	–
2	Specific Gravity	2.59	–
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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